

Department of the Navy

Proposed Plan for OU-1B

No Action for Area B Groundwater

Naval Air Warfare Center
Warminster, Pennsylvania

July 2000

NAVY ANNOUNCES PROPOSED PLAN

The Department of the Navy has completed a final Remedial Investigation (RI) for Operable Unit 1B (OU-1B), at the Naval Air Warfare Center (NAWC or "the Site") in Warminster, Pennsylvania. OU-1B consists of groundwater underlying Area B at the Site (hereafter referred to "Area B groundwater"). This RI has been completed as part of the Navy's Installation Restoration Program (IRP) and the Superfund Remedial Program. The purpose of this RI is to determine the nature and extent of a contaminated medium.

The final RI follows an interim RI for OU-1 issued in April 1993 to support an interim Record of Decision (ROD) for OU-1 issued in September 1993. The interim remedy ROD for OU-1 selected an interim remedy of pumping and treatment of Area B and Area A groundwater to limit contaminant migration and was supported by a Feasibility Study (FS). (The purpose of an FS is to evaluate alternatives for contamination of concern). This Proposed Plan summarizes the findings of the final RI for Area B groundwater, which includes the results of RI work conducted since the issuance of the interim ROD, and proposes that no action is necessary to address Area B groundwater. This Proposed Plan also provides a rationale for this proposal. In addition, the Proposed Plan explains how the public can participate in the decision-making process and provides addresses and telephone numbers for the appropriate Navy contacts.

NOTE: A glossary of relevant technical and regulatory terms is provided at the end of this Proposed Plan. These terms are indicated in **boldface** within the Proposed Plan.

This document is issued by the Navy, the lead

agency for IRP and Superfund activities at the Site, and by EPA, the support agency for Superfund actions. The Navy and EPA will issue a final decision regarding the disposition of Area B groundwater after the public comment period has ended and the comments submitted during this time have been reviewed and considered.

The Navy is issuing this Proposed Plan as part of its public participation responsibilities under Sections 113 (k), 117(a), and 121(f) of the **Comprehensive Environmental Response, Compensation, and Liability Act** (CERCLA, commonly referred to as the Superfund Law), as amended by the Superfund Amendments and Reauthorization Act. This document summarizes information that can be found in greater detail in the final **Remedial Investigation (RI)** report for Area B groundwater and other Site documents contained in the **administrative record** file for this Site. The Navy invites the public to review these and to comment on the Proposed Plan during the comment period. The administrative record file, which supports this Proposed Plan, is available for review at the Caretaker Site Office, 860 Flamingo Alley, Warminster, Pennsylvania 18974; (215) 441-2043 Hours: Monday - Friday, 9 a.m. - 4 p.m. or at the Bucks County Library 150 South Pine Street, Doylestown, Pennsylvania 18901; (215) 348-9081 Hours: Monday - Thursday, 9 a.m. - 9 p.m. Friday, 9 a.m. - 6 p.m.; Saturday, 9 a.m. - 5 p.m.

A final decision regarding the disposition of Area B Groundwater will be documented in a Record of Decision (ROD) which will be issued after all public comments are considered. The ROD will be placed in the administrative record file for review by the public.

This is the eleventh Proposed Plan issued by

the Navy for the Site. The first Proposed Plan was issued on April 26, 1993, and addressed Operable Unit 1 (OU-1), which included contaminated groundwater in overburden and shallow bedrock attributable to Area A and Area B at NAWC. Subsequent to the issuance of the Proposed Plan for OU-1, the Navy and EPA conducted a Superfund Removal Action, providing water treatment system and public water connections to residences in the vicinity of NAWC. This Removal Action was designated as Operable Unit 2 (OU-2). Due to the time-critical nature of this Removal Action, a Proposed Plan was not issued for OU-2. The second Proposed Plan was issued on August 19, 1994, and addressed Operable Unit 3 (OU-3), which included contaminated groundwater attributable to Area C at NAWC. Site 4 is located within Area C. Since the issuance of the Proposed Plan and subsequent Records of Decisions for OU-1 and OU-3, a groundwater treatment plant has been constructed within Area A and the cleanup of contaminated groundwater attributable to both Area A and Area C has begun. (See Site Background below for further discussion regarding the history of Area B groundwater) The third Proposed Plan was issued on June 5, 1997, and addressed contaminated groundwater attributable to Area D at NAWC, or Operable

Unit 4 (OU-4). A Record of Decision for OU-4 was issued and cleanup of contaminated groundwater attributable to Area D has also been initiated. The fourth Proposed Plan was issued on August 20, 1999, and addressed soil, sediment and surface water associated with Site 8, or Operable Unit 5 (OU-5). A Record of Decision issued on September 29, 1999 selected no further action for OU-5. The fifth and sixth Proposed Plans were issued concurrently on February 14, 2000 and address Sites 6 and 7 (OU-7) and Site 4 (OU-6), respectively. The seventh, eighth and ninth Proposed Plans were issued on May 1, 2000 and address Area D soils (OU-8), Area D groundwater (OU-4), and Area A soils (OU-9), respectively. The tenth Proposed Plan was issued concurrently with this plan and addresses Area A groundwater (OU-1A).

SITE BACKGROUND

NAWC is a 824-acre facility located in Warminster Township, Northampton Township and Ivyland Borough, Bucks County, Pennsylvania (see Figure 1 for Site Location Map). As a result of the Base Realignment and Closure Act (BRAC), NAWC ceased operations on September 30, 1996. The majority of NAWC

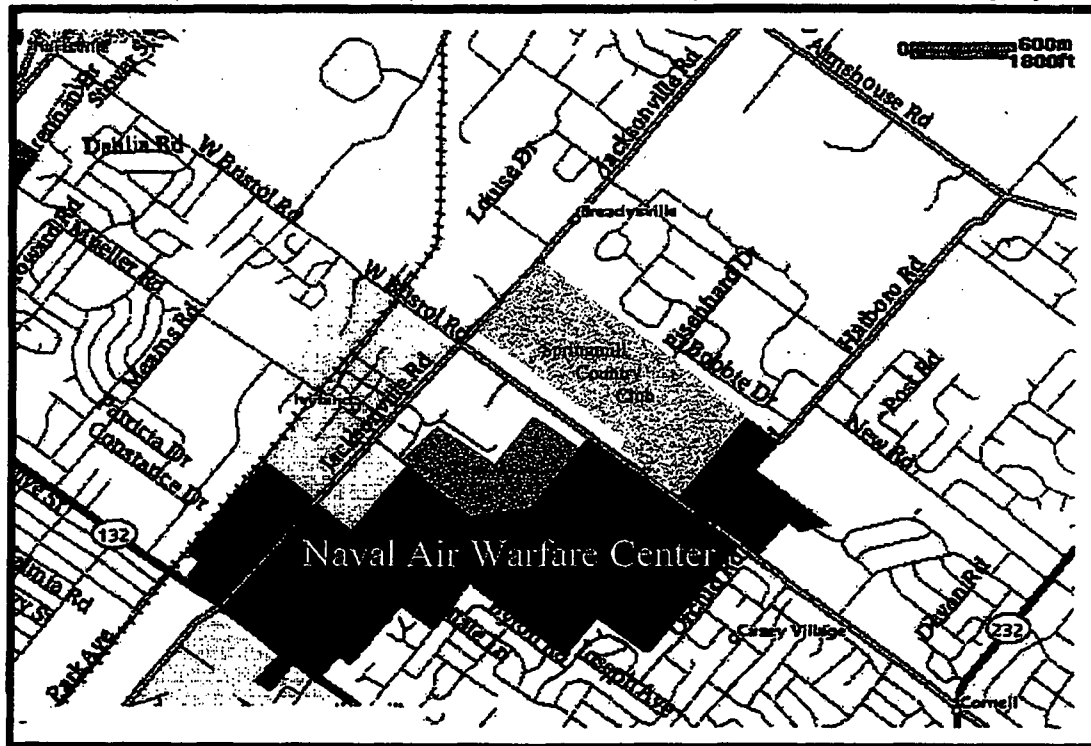


Figure 1. The former NAWC, Warminster, PA

Site 7 reportedly consisted of two disposal trenches that were used from 1950 to 1955 to receive sludge from the wastewater treatment plant. The trenches were reportedly 100 feet long by 12 feet wide and 8 feet deep. The estimated potential capacity of each trench is 356 cubic yards. The trenches were reportedly covered with fill after each dumping episode.

Upon site closure in 1955, the trenches were covered with 2 feet of soil, graded, and seeded.

Remedial Investigation work addressing Area B groundwater has been performed in phases. The Phase I RI, which was initiated in late 1998 and completed in 1990, included the installation and sampling of wells to monitor groundwater in overburden and shallow bedrock. A Phase II RI was initiated in late 1991 and included the installation and sampling of additional wells and water-level monitoring. The findings of the Phase II RI and a summary of the Phase I RI were included in the Phase II RI report released April 1993. Based on the information available at the time, the Phase II RI report concluded that Area B groundwater presented an unacceptable risk (See Summary of Site Risks) and that further RI work should be performed to determine the full nature and extent of the groundwater contamination of concern. A focused Feasibility Study was prepared to evaluate remedial alternatives for minimizing migration of contaminated groundwater while RI work was completed.

In September 1993, the Navy and United States Environmental Protection Agency (EPA) signed an interim remedy Record of Decision (ROD) for Operable Unit 1 (OU-1) where OU-1 is defined as contaminated overburden and shallow bedrock groundwater attributable to Area A and B at the base. This ROD selected an interim remedy to minimize the migration of contaminated groundwater while additional studies were to be performed to determine the full nature and extent of groundwater contamination. The interim remedy consisted of pumping and treating groundwater from Area B (as well as Area A) with continued periodic testing of groundwater in monitoring wells and other wells near the base over a 30-year period.

In 1993 and 1994, the Navy conducted an additional hydrogeologic study in Area B. The study included the installation and sampling of additional monitoring wells, water level studies and performance of a pumping test. A description of this work is provided in a draft Area B Hydrogeologic Report issued in April 1995.

In December 1994 and January 1995, the Navy installed two extraction wells (EW-12 and EW-14) and six observation wells (OB-5 through OB-10) downgradient of Sites 5, 6, and 7. Yield

tests, water-level measurements, and water quality monitoring were conducted to evaluate aquifer characteristics in support of the OU-1 ROD groundwater remedy. The two extraction wells were installed in the downgradient portion of the projected plume of trichloroethene (TCE) identified in the Phase II RI and sampled while pumping tests of various duration were performed. No contamination above Maximum Contaminant Levels (MCLs) protective of public drinking water supplies were detected in the pumped water, suggesting that the operation of the extraction wells was unnecessary. In response, the plan to pump and treat groundwater in Area B was abandoned while additional RI work was performed to better define groundwater quality and hydrogeologic conditions in Area B.

As called for by the interim remedy ROD, Area B Groundwater has been regularly monitored since 1993. A total of 14 rounds of groundwater monitoring in Area B and adjacent areas have been conducted. In addition, comprehensive sampling and water level measurements of all serviceable monitoring wells in the Area B study area were performed in July 1998 and a partial round of groundwater samples and water level measurements at Area B was performed in December 1999.

The results of RI work for Area B groundwater, including work performed since the interim RI, are included in a final RI report dated May 2000. Significant conclusions of the final RI are as follows:

- Only two monitoring wells have continued to exhibit TCE levels above the MCL of 5 ug/L. In particular, TCE has been detected in wells HN-36S and HN-03S at 5 ug/L to 12 ug/L. These wells are in the projected TCE plume that was identified in the Phase II RI. No other organics were detected above MCLs.
- Monitoring of groundwater between wells HN-36S and HN-03S, which are 300 feet apart, did not detect TCE above the MCL.
- Groundwater samples collected during a pumping test in extraction well EW-B14, located next to monitoring well HN-03S, did not detect TCE above the MCLs.
- There are diffuse low levels of TCE in Area B Groundwater, however there is no discernable

plume that exceeds the MCL of 5 ug/L.

SUMMARY OF SITE RISKS

As part of the RI, the Navy conducted a risk assessment to estimate the potential risks to human health posed by use of Area B groundwater. To assess these risks, hypothetical exposure scenarios under residential use were calculated.

Potential human health risks are categorized as **carcinogenic or noncarcinogenic**. A hypothetical carcinogenic risk increase from exposure should not exceed a risk range from 1×10^{-6} (an increase of one case of cancer for one million people exposed) to 1×10^{-4} (one additional case per 10,000 people exposed). Noncarcinogenic risks are estimated utilizing Hazard Indices (HI), where an HI exceeding one is considered an unacceptable health risk.

A risk assessment for Area B groundwater was initially performed as part of the Interim RI and found that the non-carcinogenic risk exceeded an HI of 1.0, and thus was unacceptable. Primary contributors to the unacceptable non-carcinogenic risk were found to be arsenic, barium, cadmium and manganese. The carcinogenic risk was estimated to 8.4×10^{-5} , which is within the acceptable range. However, TCE, a primary contributor to the estimated carcinogenic risk, was found at concentrations exceeding the MCLs in three monitoring wells during Phase I and II RI work.

The final RI has reevaluated risks based on data generated since the Interim RI. The revised human health risk assessment estimated a carcinogenic risk of 1.8×10^{-6} for the potential future residential groundwater user. This risk is well within the acceptable range. Since the interim RI, TCE has been detected at levels of 5 to 12 ug/L in two monitoring wells, exceeding the MCL of 5 ug/L. However, the RI concluded that there is no continuous, discernable plume of TCE that exceeds the MCL. In this case, TCE in Area B groundwater does not present an unacceptable risk.

The non-carcinogenic risk was found to correspond to an HI of up to 4.1, exceeding the acceptable HI of 1.0. Manganese was the primary contributor to the non-carcinogenic risk, accounting for 3.52 of the HI. A review of RI data found that manganese levels of concern

were present in only one well cluster (wells HN-64S and HN-64I) and were within background levels identified in the Phase II RI. Based on this review, the manganese levels do not appear to be attributable to the Site and Area B groundwater does not present an unacceptable non-carcinogenic risk.

SUMMARY OF PROPOSED REMEDY

The results of the risk assessment indicate that, based on available information, Area B groundwater does not present an unacceptable risk to human health. In this case, the Navy, with the support of EPA, proposes No Action. There are no costs associated with this proposed remedy. Based on available information, the Navy and EPA believe that no action is necessary to be protective of human health and the environment.

THE COMMUNITY ROLE IN THE SELECTION ROLE

The Navy solicits written comments from the community on the proposed remedy for Area B groundwater identified in this Proposed Plan. The Navy has set a public comment period from July 10, 2000 through August 9, 2000 to encourage public participation in the remedy selection process for Area B groundwater.

A public meeting has been scheduled for Wednesday evening, July 19th, at 7:00 p.m. in the North American Technology Center 2nd floor conference room, located at 626 Jacksonville Road. Comments from the public meeting and Proposed Plan will be summarized and responses will be provided in the Responsiveness Summary section of the ROD. The ROD is the document that will present the selected remedy.

To obtain further information, contact Mr. Lonnie Monaco, BRAC Environmental Coordinator, at 610-595-0567 x164, or send written comments to:

Mr. Lonnie Monaco
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop #82
Lester, PA 19113-2090

Please note that all comments must be submitted and postmarked on or before August 9, 2000.

GLOSSARY

Administrative Record – Section 113K of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA) requires the establishment of an administrative record which forms the basis for the selection of a response action. The administrative record should include the final documents which are a part of the Department of the Navy's (DON's) decision making process.

Carcinogenic – Cancer producing.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) – A federal law passed in 1980 and modified by the Superfund Amendments and Reauthorization Act (SARA) of 1986. The Acts created a special tax that goes into a Trust Fund, commonly known as Superfund, to investigate and clean up abandoned or uncontrolled hazardous waste sites. Under this program, EPA either can pay for a clean up when parties responsible for the contamination cannot be located or are unwilling or unable to perform the work; or can take legal action to force the parties responsible for site contamination to clean up the sit or pay back the federal government for the cost of the cleanup.

National Priorities List (NPL) – EPA's list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action, under Superfund. A site must be on NPL to receive money from the Trust Fund for remedial action. The list is based primarily on the score a site receives from the Hazard Ranking System. EPA is required to update the NPL at least once a year.

Remedial Investigation (RI) – An in-depth study designed to gather the data necessary to determine the nature and extent of contamination at a Superfund site; establish criteria for cleaning up the site; identify preliminary alternatives for remedial actions; support the technical and cost analyses of the alternatives. The remedial investigation is usually done with the feasibility study. Together they are usually referred to as the RI / FS.

Volatile Organic Compound (VOC) – Any organic compound which participates in atmospheric photochemical reactions except for those designated by the EPA Administrator as having negligible photochemical reactivity.

MAILING LIST

If you did not receive this Proposed Plan in the mail and wish to be placed on the mailing list for future information pertaining to this site, please fill out, detach, and mail this form to

Mr. Lonnie J. Monaco
BRAC Environmental Coordinator
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10 Industrial Highway, Mail Stop #82
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